

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE TOWN OF BARNSTABLE, MASSACHUSETTS
AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 1**

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to establish a formal cooperative understanding between the Town of Barnstable, Massachusetts (**the Town**) and the United States Environmental Protection Agency, Region 1 (**EPA**) (collectively, the Parties). The Parties expect to construct a green infrastructure (**GI**) stormwater best management practice (**BMP**) retrofit for the control of nitrogen (**N**) at an approximate 0.35 acre parcel of municipal land at the Gateway Marina Area at Hyannis Inner Harbor, located at 115 Pleasant Street and 135 South Street in Barnstable, MA. The project will include a public outreach component to engage and educate the community and showcase the BMP.

An important goal of this project is to educate municipal officials and other public and private stakeholders about GI as a practical and effective technique to reduce stormwater runoff and pollution and improve water quality. The Parties consider this BMP project to be valuable for a number of reasons. First, the BMP will lead to improved water quality in Hyannis Inner Harbor. Second, the project will enhance public and private awareness of GI as an effective approach for municipal stormwater management. Third, the project will help engage and educate local department of public works engineers, other municipal officials, and the general public about GI as a viable and effective control for stormwater. In addition, the Town intends to implement operation and maintenance (O&M) procedures to ensure the BMP retrofit continues to operate into the foreseeable future.

II. BACKGROUND

The objective(s) of this project is to construct a GI N BMP retrofit at an approximate 0.35 acre parcel of municipal land at the Gateway Marina Area at Hyannis Inner Harbor, located at 115 Pleasant Street and 135 South Street in Barnstable, MA. The Town's municipal small separate storm sewer (MS4) runs from South Street down past the target BMP area and discharges into Hyannis Inner Harbor, a water body listed as impaired for total nitrogen and pathogens.

The project will divert a portion of stormwater flow from the MS4 to the BMP; the diversion will occur at a manhole/stormwater structure to be constructed off the 24-inch diameter drainage trunk line that runs north to south adjacent to the site. The BMP will be designed to accommodate an approximate 0.3 inch storm from the MS4 system which services an approximate 6.9 - 8.4 acre drainage area.

N, and in particular dissolved inorganic N, is known to be highly mobile and susceptible for wash-off in early portions of storm runoff events from impervious surfaces. In addition, on Cape

Cod, it is reasonable to infer that smaller storms generate runoff from primarily impervious surfaces because the storm sizes are not of sufficient depth to generate notable runoff quantities from pervious areas. Moreover, it is likely existing and available event mean concentration (EMC) data for New England do not entirely reflect the first flush effects on an impervious-only surface and are likely to be underestimating the percentage of annual total N loads delivered to off-line small capacity BMPs from contributing impervious surfaces. Consequently, it is anticipated the system should conservatively control an approximate 42.2% of the total available N loading to Hyannis Inner Harbor; it is likely the actual performance, once the BMP is established after a period of equilibration, will be better.

The Parties intend to construct this project in two phases. The objective of the first phase is to develop a final design for the BMP; the second phase is construction of the BMP. The construction phase will include installation of a diversion structure into the MS4 line as described above to divert an approximate 0.3 inch water quality volume (WQv) to the BMP. The BMP should treat an approximate 6.9 - 8.4 acres of MS4 catchment (approx. 3.5 – 4.2 acres impervious surface) that would ordinarily discharge to Hyannis Inner Harbor, a water body listed as impaired for total nitrogen and fecal coliform, and with a subwatershed N reduction target of 68.7%.

EPA must have access to the BMP area and the MS4 for its consultants, contractors, staff and managers to plan and construct the BMP. In addition, after design and construction of the BMP, access may be required for training and educational purposes. As described below in Section V, EPA executed a separate access agreement with the Town of Barnstable, dated September 30, 2014. It is EPA's understanding that no other access agreements are necessary.

The Town intends to assist this project by providing project coordination, including site access, outreach to nearby residents (as necessary), materials coordination and management, and general project administration. It is anticipated that EPA's contractors will need to tie directly into the storm sewer trunk line, which will require coordination with the Town's Department of Public Works (DPW).

Over the course of the project and for three years after completion of construction, EPA and the Town may coordinate as appropriate to showcase the site for the purpose of educating the public, other state or municipal officials, or other interested parties (including scheduled O&M activities). EPA may document the progress of the project through video and photographs, and may develop one or more of its web pages for the project. After the construction of the BMP is completed, EPA intends to erect a public sign/kiosk showcasing the project partnership and the nature and benefits of GI.

III. AUTHORITY

EPA enters into this MOU pursuant to Section 104 of the Clean Water Act, which authorizes EPA to encourage and cooperate with, and render technical services to, individuals, as well as

public and private sector entities, to promote the coordination and acceleration of training related to the causes, effects, prevention, and elimination of water pollution.

IV. ROLES AND RESPONSIBILITIES

A. The Town of Barnstable, Massachusetts. The Town expects to contribute to the support of this MOU by providing, as necessary under the circumstances, logistics and coordination for facilitating EPA and its contractors access to the site and other reasonable accommodations as appropriate for design and construction of the BMP. This may include (but is not limited to):

- general project administration, including coordinating and providing access to the site for EPA and its contractors, and off-street and overnight parking for equipment vehicles, if any;
- coordinating and assisting with management of excavated and feedstock materials at the site;
- presentation and representation before appropriate boards/commissions for permitting arising under the Massachusetts Wetlands Protection Act (WPA);
- negotiating with leaseholders and other property interests for site access and contemplated use of the site by the project;
- providing timely review and input on project deliverables, including design plans;
- assistance and coordination for obtaining in a timely manner any Town permits necessary for access and conduct of work on the Town's storm sewer;
- coordinating with EPA for development of public messaging, including the substance and formatting of a project sign/kiosk to be installed at the site; and
- providing access to MS4 system and manholes, and coordinating and providing traffic control (including, as necessary, police details) for work on manholes in and/or near the site.

In addition, the Town understands the following constraints relating to the construction of the BMP:

1. Schedule. The project is under a fairly short and tight timeline. It presumes commencement of construction in the spring of 2015 (currently, week of April 12, 2015; to be initiated before a tandem project site in Chatham, MA) with a target completion date as early as May 16, 2015. This schedule reflects EPA's appreciation for the need to complete the project well before the Cape summer season begins. It is not likely, but if necessary, work on the project may stop and the project site secured until work may be resumed and completed in the fall of 2015 after the summer season has ended. The Town intends to work with EPA to notify the public of the schedule, any street closures, and access restrictions.

2. Site Access, Traffic Coordination and Public Outreach. To perform any and all activities necessary to construct the BMP, EPA and its contractors will require access to the site. As

explained in Section V below, the Parties have executed a separate access agreement to facilitate access to the site in general accordance with the schedule above.

Because access to the site will be restricted primarily to a relatively remote portion of the Marina Gateway Area parking lot closest to the Maritime Museum, EPA does not anticipate construction activities will require traffic control. Most construction activities will be confined to the site, with some use of the aforementioned parking lot area for some materials storage and management. Delivery of feedstock materials will likely be by dump truck and very likely use the Gateway Marina parking lot. However, until a Pre-Construction Meeting has occurred, it should be contemplated that some access may alternatively occur by way of Pleasant Street as discussed with the Town at the Project Kickoff Meeting in October 2014. EPA and the Town intend to provide as much notice as possible regarding the scheduling of work to the Maritime Museum and the public.

EPA expects the Town to inform nearby residents (and to the extent necessary, the general public) of the construction activities and schedule so that residential properties located adjacent to the site are aware of the construction and reasonably apprised of impending construction traffic, parking restrictions, and related activity and noise. In addition to materials management (discussed below), EPA and its contractors may need parking access near the site. It is likely that some equipment (e.g., excavating equipment) may be left onsite for the duration of the project. The Town may decide whether and how to provide adequate notice to the general public, and whether additional measures may be necessary to ensure the safety of the public.

The Town intends to participate in public outreach and press events from time to time over the life of this MOU, and provide assistance to EPA in its efforts to educate officials from other municipalities, states and watershed groups by showing the site and making presentations.

3. Illicit Discharge Pollution. Because the project depends on tying into the Town's MS4, EPA expects to sample the storm sewer line for bacteria pollution from illicit discharges to determine if there is a human indicator of an illicit discharge. If an illicit discharge is detected, EPA intends to work with the Town as needed to resolve the matter.

- If the sampling confirms an *absence* of an illicit discharge, the project may proceed to construction. Thereafter, on a semi-annual basis, the Town understands it will be responsible for routine monitoring of the discharge to the BMP using EPA's 'Stormwater Toolkit' (or equivalent) to help ensure the pipe remains free from illicit discharges in the future.
- If the sampling confirms the *presence* of an illicit discharge, EPA may (a) construct the BMP but may not complete the tie-in from the MS4 to the BMP until the problem is corrected or otherwise resolved, or (b) complete the tie-in but plug the outflow pipe until the problem is corrected or otherwise resolved. EPA would expect the Town to address the illicit discharge as consistent with Part II, Section (B)(3) of its current Massachusetts

Small MS4 Stormwater General Permit. If possible, the Town should correct the illicit discharge so that the connection from the MS4 to the BMP can be completed.

4. Operation and Maintenance (O&M).

- **BMP O&M.** EPA and its contractor plan to develop a brief O&M Plan for the N BMP retrofit. After the BMP is constructed, the Town understands that it will be responsible for maintaining and operating the BMP consistent with the O&M Plan. O&M may include, among other things, periodic (semi-annual) confirmatory sampling of the storm sewer discharge using EPA's stormwater toolkit (or equivalent) to confirm the ongoing absence of illicit pollution and to confirm the diversion structure is free of sediment and continues to discharge the design volumetric flow to the BMP.

O&M may also include appropriate landscaping measures, such as inspecting and removing excess sedimentation and watering, weeding and replacing plants (as needed) to ensure the BMP continues to operate as designed.

- **BMP Performance Monitoring.** Because an important ancillary objective of the project is to assess the ongoing performance of the BMP for treatment and control of nitrogen, the Town intends to coordinate (as reasonable and appropriate) with DPW, EPA and others (e.g., non-profit groups) to execute for a limited time (i.e., 1 – 2 years or approximately 20 storm events) certain sampling and O&M procedures that will be described in a Monitoring Plan and Quality Assurance Project Plan (QAPP) for the project (*currently under development*) (refer to Section B below for activities, services and/or materials and equipment provided by EPA for BMP performance assessment).

The project has contemplated that a small 8 x 8 ft² shed would be erected on or near the BMP to house BMP performance monitoring equipment. However, the Town pointed out that the site is within a Map (FIRM) Special Flood Hazard Area (SFHA) area, classified as Zone AE with a Base Flood Elevation (BFE) of elevation 12 (NAVD88) based on FIRM Panel 0569J for Barnstable County, and this zone is classified as an area subject to inundation by the 1-percent-annual-chance flood event, also known as the 100-year storm floodplain. Because the shed would reside on-site for greater than 180 days, the shed would likely be classified as a "Permanent Structure" which implicates a potentially complicated permitting process. To simply time-critical permitting for initiating BMP construction, and until an agreeable solution for locating/siting the shed (or other alternative) has been identified, EPA and the Town understand that the shed will be left off of the site plan intended for presentation before the Conservation Commission. Once a solution to siting monitoring equipment has been identified – whether using a shed, or perhaps by installing the equipment at a suitable location inside of the Maritime Museum Boat House (or other location) - an amendment may or may not be necessary for filing with the Conservation Commission. Because BMP monitoring would not occur for approximately a year following BMP operation, the matter of siting monitoring equipment for BMP performance assessment is not time critical.

5. Use of Volunteers. The Parties understand that the Town may coordinate with the Cape Cod Commission (CCC) and others for the purpose of performing some of the aforementioned O&M procedures. After a period of some three (3) or so storm events which are to be used as a training period of the Town and others including volunteers, the Town expects to be responsible for organizing, managing and overseeing the volunteers' work and their activities.

Materials Management.¹ Due to the nature of the site, it is likely the project will require some space for staging and managing raw/input materials at the marina parking area next to the Park walkway. The Town has indicated the area is available and it is depicted on a site plan provided by the Town as filename, "14017_drainage2.dgn", entitled "Plan showing proposed aerobic cell at Gateway Marina in Barnstable (Hyannis), MA, for the Town of Barnstable, February 26, 2015". EPA anticipates that it will employ hay bales or a compost sock to ensure there is no runoff of sediment from staged materials.

Due to the nature of the site and BMP characteristics, it is likely the project will generate limited quantities of excavated native materials. The Town expects to coordinate with DPW to find a use for these materials. The Town and EPA should coordinate closely so that this material is not handled more than once.

In addition, for areas near the site that may need clearing (e.g., shrubs), EPA should coordinate with the Town to determine whether some or all of this plant matter could possibly be classified as invasive species. If so, EPA should plan to carefully manage such materials to ease acceptance and management by the Town for appropriate disposal or treatment. If no such invasive materials are present, then such materials may be managed in accordance with procedures for general materials management.

It is EPA's expectation that its contractors will leave the constructed BMP in as finished a condition as possible under the circumstances. However, due to construction activities, the general surface areas may require the Town to perform certain related landscaping practices for final aesthetics (e.g., erection of a new fence(s); landscaping of certain plants, bushes; etc.). Indeed, the overall success and value of the project as an education and outreach project may depend to some extent on the overall aesthetic appearance of the site. However, if EPA's contractor removes existing fencing, or if a given section of an existing fence is damaged by site activities, then EPA will be responsible for replacing such fencing. In addition, planting / landscaping that is associated with the BMP itself will be provided and planted by EPA.

¹ As of the first week of April, 2015, and by the initiation of EPA's contractor and construction subcontractor, it is EPA's understanding coordination with the Town in this regard has already occurred. Although, a Pre-Construction Meeting had been scheduled for the week of April 12, EPA's contractor was able to initiate construction mobilization sooner than anticipated and consequently, it is assumed a formal Pre-Construction Meeting is not necessary at this time.

Lastly, in the event some native or feedstock materials are left on-site, the Town expects to accept and/or arrange for the use and/or disposition of these materials.

B. The U.S. Environmental Protections Agency, Region 1. EPA intends to support this MOU by providing labor, materials and services necessary to construct the N BMP retrofit within the overall project timeline. In addition, EPA intends to provide and install one or two signs/kiosks for the project. EPA intends to develop signs/kiosks and their content and format in collaboration the Town and other stakeholders, as appropriate (e.g., CCC).

As reasonable under the circumstances, EPA intends to mitigate the amount of excavated waste native and/or feedstock materials left on-site following construction by incorporating such materials into the project design. However, EPA expects that all unused feedstock and/or native materials left on-site after completion of the project will be the responsibility of the Town.

After construction of the project, the site shall serve as a stormwater BMP in accordance with this MOU. After the expiration of this MOU, the improvements made to the site shall be permanent and run with the land. The BMP and its operation and management will be the Town's responsibility.

EPA may document the project site and activities in video and photographs for the Agency's education and outreach efforts, and for development of an EPA project website for the general public that documents the project in detail. For all outreach and education-related activities, the Parties will coordinate with EPA's Office of Public Affairs, and intend to coordinate closely with the Project Partners, as appropriate. EPA welcomes incorporation of Science, Technology, and Engineering and Math (STEM) programs, such as those available through the Cape Cod Marina Museum and/or Barnstable Schools, into any and all outreach efforts.

For BMP performance assessment and monitoring, EPA will provide training for the Town for one to three storm events; sampling/monitoring equipment; sample jars and containers; and shipping of collected samples for laboratory analysis. Refer to the project Monitoring Plan and QAPP (*currently under development*).

Project Tasks

<u>Task</u>	<u>Organization</u>
BMP and Site Design	EPA
Site Access and Coordination	Town
Permitting: Mass Wetlands Act, local	Town
Tree, brush and shrub clearing and disposal	EPA, Town
Materials Mngt	EPA, Town
BMP Construction	EPA
MS4 Diversion Structure / BMP Tie-In	EPA
BMP Landscaping incl. plants, shrubs, grass	EPA
Additional Landscaping / fencing	EPA, Town

BMP Operation and Maintenance (O&M)	EPA, Town
BMP Performance Assessment and Monitoring	EPA, Town, CCC, Others
Education and Outreach	Town, EPA, CCC, Others

V. ACCESS

To facilitate timely access to the project area, the Parties executed a separate access agreement dated September 30, 2014.

VI. LIMITATIONS

A. All commitments made in this MOU are subject to the availability of appropriated funds and each party's budget priorities. Nothing in this MOU, in and of itself, obligates the Town or EPA to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or other financial obligation. The Town agrees not to submit a claim for compensation for services rendered to EPA in connection with any activities it carries out in furtherance of this MOU.

B. This MOU is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate subsidiary agreements that will be effected in writing by representatives of both parties.

C. This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity against the Town or EPA, their officers or employees, or any other person. This MOU does not direct or apply to any person outside the Town and EPA.

D. The Town agrees that should a third party claim arise under the terms and conditions of the Federal Tort Claims Act (FTCA), 28 U.S.C. 1346(b), 2671, 2680, or under the laws of the State of Massachusetts based on negligence or a wrongful act or omission, the party whose employee(s)' conduct gave rise to the claim shall be responsible for the investigation and disposition of said claim. For claims involving conduct of employees of more than one party arising out of a joint activity conducted pursuant to this MOU, the parties agree to work cooperatively to determine which entity will be primarily responsible for the investigation and disposition of the claim.

VII. POINTS OF CONTACT

The following individuals are designated points of contact for the MOU:

United States Environmental Protection Agency Region 1: Ray Cody, EPA Region 1, 5 Post Office Square, Suite 100, Mail Code OEP06-1, Boston, MA 02019-3912, cody.ray@epa.gov (617) 918-1366.

Town of Barnstable: Dale Saad, Ph.D., Senior Project Manager, Water and Sewer, Barnstable DPW, 382 Falmouth Road, Hyannis, MA 02601, (508) 790-6400 x4941
dale.saad@town.barnstable.ma.us.

VIII. MODIFICATION/DURATION/TERMINATION

This MOU shall take effect upon the signature of the Parties and remain in effect for a period of three years. This MOU may be extended or modified at any time per the mutual consent of the Parties. Additionally, a party may terminate its participation in this MOU at any time by providing written notice to the other party at least 90 days in advance of the desired termination date.

IX. APPROVAL

Ken Moraff, Director
EPA New England

Date

Thomas K. Lynch, Town Manager
Town of Barnstable

Date